

REMARKS

Claims 1-10 are all the claims pending in the application.

Entry of the Amendment along with reconsideration and review on the merits are respectfully requested.

Request for Personal Interview

Applicants submit that upon entry of the Amendment, the pending claims are in condition for allowance, and such is respectfully requested. If the Examiner does not believe that the pending claims are in condition for allowance, Applicants respectfully request a personal interview between the Examiner and Applicants' representative to be held at the USPTO at a mutually agreed-upon time subsequent to the filing of this Amendment but prior to the issuance of an Office Action which would continue the prosecution of this application. It is the intent of Applicants' representative to follow up with coordinating a mutually agreeable time and date for a personal interview. However, if the Examiner wishes to follow-up, Applicants' representative can be contacted directly at the local telephone number (202)663-7381.

Claim Rejections - 35 U.S.C. § 103

The Examiner maintains the original obviousness rejections as stated in the Office Action dated December 17, 2002.

Claims 1-2 and 6-10 are rejected under 35 U.S.C. § 103(a) as assertedly being unpatentable over Shirasaki et al (U.S. Patent No. 6,025,894) in view of Allen et al (U.S. Patent No. 6,111,696) for the reasons given in the Office Action.

Claims 3-5 are rejected under 35 U.S.C. § 103(a) as assertedly being unpatentable over Shirasaki and Allen as applied to claim 1 above, and further in view of Pokorny et al (U.S. Patent No. 6,461,775) for the reasons given in the Office Action.

Applicants respond as follows.

In addition to the remarks previously provided in the Amendment filed on September 17, 2003, in response to the Final Office Action mailed June 17, 2003, Applicants respond as follows. Claim 1 is amended to recite "~~An~~A polarized-light emitting organic electroluminescent device comprising..." in order to clarify that the present invention emits polarized light, and it is not necessary to dispose a separate polarizer. Claims 2-7 are amended accordingly to reflect a polarized-light emitting organic electroluminescent device consistent with Claim 1. No new matter is added. Entry of the Amendment is respectfully requested.

Applicants claim a novel and unobvious combination of elements. Applicants claim, inter alia, a polarized-light emitting organic electroluminescent device containing an organic electroluminescent element and a polarized-light scattering film which comprises a light-transmitting resin and dispersedly contained therein minute regions differing from the light-transmitting resin in birefringent characteristics and in which the difference in refractive index between the minute regions and the light-transmitting resin in the axis direction in which a linearly polarized light has a maximum transmittance, Δn^1 , is smaller than 0.03 and that in a direction perpendicular to the Δn^1 direction, Δn^2 , is from 0.03 to 0.5, the light produced by the organic electroluminescent element being emitted from the device through the polarized-light scattering film.

Shirasaki et al. (US 6,025,894) discloses a scatter control film 120 as mentioned by the Examiner. This film functions to increase light perpendicularly emitted by transmitting light made incident nearly from the normal direction to the film 120 (See Shirasaki, column 33, lines 32-37, and column 35, line 64 to column 36, line 13).

Shirasaki never intends to emit the polarized light from the device itself. The device just emits non-polarized light. In Fig. 35, two polarization plates 134, 135 are provided to make and emit the polarized light.

The scatter control film is totally different in object and structure from the polarized-light scattering film according to the present invention. Therefore, Applicants submit that it is non-obvious for one skilled in the art to replace the film 120 of Shirasaki with a polarized-light scattering film such as a DRST (diffusely reflecting, specularly transmitting) polarizer 116 of Allen et al. (US 6,111,696).

Furthermore, as a way of illustration, theoretical light utilization efficiency is completely different between the present invention and that of Shirasaki.

The light emitting efficiency of the normal EL device is about 20% as described in the Background of the Invention.

The 20% emitted light is grouped as follows because this 20% is natural light:

10%" (1)

10% \perp

Herein, the symbols \perp and " designate two light components perpendicularly polarized to each other. Natural light can be decomposed into these two components.

If the remaining 80% light is ideally extracted in the present invention, 80%" light (2) can be obtained because of the polarizing and scattering function of the polarized-light scattering film. This polarized light can be wholly used. Accordingly, the total light utilization efficiency is theoretically calculated by the sum of (1) and (2).

$$(1) + (2) = 90\%"$$

On the other hand, even if the remaining 80% light is ideally extracted in Shirasaki, 80% light is natural light. This natural light is grouped as aforementioned:

$$40\%" (3)$$

$$40\% \perp$$

This means it is necessary to place a separate polarizer in Sharazaki to obtain polarized light. Accordingly, the total light extracting efficiency is theoretically calculated by sum of (1) and (3).

$$(1) + (3) = 50\%"$$

In regard to Allen, the Examiner sets forth in the Advisory Action mailed October 14, 2003, that the statements on page 6, lines 16-21 in the Remarks filed on September 17, 2003, "incident light toward an oblique deflection curves its light path and permeates", assertedly appears to be in contradiction to the generally accepted principles of physics and contradictory to the teachings of the cited prior art. Applicants clarify their previous comments by submitting that, as shown in Fig. 12A of Allen, the light 133 perpendicularly made incident on the prism sheet 113 is reflected and travels like 135. On the other hand, in Fig. 12B, the light 145 which is

obliquely made incident on the prism sheet 113 is refracted and permeates the sheet 113. It travels like 147.

Therefore, as stated previously, but clarified herein, the cited art does not teach or disclose to apply optical members relating to scattering, which are used in quite different purposes from organic EL devices, in different applications, and one skilled in the art would not be motivated to make such an application. In the event that the scatter control plate of Shirasaki is replaced with the combination as shown in Figs. 12A and 12B of Allen, vertically incident light reflects, and incident light toward an oblique direction curves its light path and permeates. One skilled in the art would expect this combination as establishing both transmission mode and reflection mode, but would expect that visibility markedly lowers at a reflection mode (due to reflection in the visible direction).

On the other hand, the concept of the present invention that light is emitted as a polarizing light while improving external emission efficiency of an organic EL by selective polarized light scattering of a polarized light scatter plate and confining the effect by total reflection differs from the concept of visibility improvement as disclosed in Shirasaki.

Thus, Applicants submit that one skilled in the art would not have been motivated to combine these references based on their teachings alone, nor would one skilled in the art know how to combine these references to achieve a polarized-light emitting organic electroluminescent device as claimed in Applicants' independent Claim 1.

Claims 2-10 are dependent upon Applicants' Claim 1 and are novel and unobvious for at least the same reasons as given above for Claim 1.

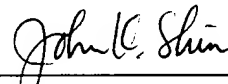
Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejections under 35 U.S.C. § 103(a).

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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